

TECHNICAL DATA ON SOFT SOLDERS

Alloy Composition	Melting Temperature				Specific Gravity %	Tensile Strength PSI	Shear Strength PSI	Electrical Conductivity Cu%	Brinell Hardness	Elastic Modulus 10 ⁶ PSI	Surface Tension dynes/cm at 290°C
	Solidus °F	Liquidus °F	Solidus °C	Liquidus °C							
Sn100	450	450	232	232	7.29	1800	2560	13.9	4.0	6.11	545
Sn63Pb37	361	361	183	183	8.41	6700	6060	11.5	12.0		490
Sn62Pb38	361	363	183	184	8.50	6700	6060			4.35	
Sn60Pb40	361	374	183	190	8.51	6400	5700	11.3	12.0	4.35	
Sn55Pb45	361	397	183	203	8.68						
Sn50Pb50	361	420	183	214	8.88	6450	5870	10.9	11.0		476
Sn45Pb55	361	440	183	225	9.08	6200	5720	10.4	10.6		
Sn40Pb60	361	460	183	238	9.29	6200	5680	10.1	10.5	3.34	474
Sn35Pb65	361	477	183	247	9.50	6050	5590	9.8	11.0		
Sn30Pb70	361	496	183	258	9.74	5750	5500	9.3	11.2	3.05	470
Sn25Pb75	361	514	183	268	10.00	5400	5310	8.9	11.5		
Sn20Pb80	361	536	183	280	10.23	5200	4740	8.7	11.5	2.90	467
Sn15Pb85	437	553	225	289	10.50	5000	4470	8.4	11.3		
Sn10Pb90	514	576	268	302		4700	4400				
Sn05Pb95	574	597	301	314	11.06	4190	3000	8.0	9.0		
Sn62Pb36Ag02	354	372	179	189				11.6	16.0	3.41	
Sn60Pb36Ag4	354	475	179	246		8500	7000				
Sn10Pb88Ag02	514	570	268	299	10.75	3260		8.4	12.0	2.80	
Sn05Pb93.5Ag1.5	565	574	296	301							
Sn05Pb92.5Ag2.5	536	536	280	280	11.02	4210	2240	8.6		2.00	
Sn1Pb97.5Ag1.5	588	588	309	309	11.28	3600	3600	8.8	11.0		
Sn43Pb43Bi14	291	325	144	163	9.02	6400				3.56	
Pb94.5Ag5.5	579	689	303	365	11.35	4000	2900	6.0			
Pb97.5Ag2.5	580	580	304	304		3600	2900	7.4			
Pb100	621	621	327	327	11.34	1780	1800	7.9	4.0	2.61	
Lead Free:											
Sn95Ag5	430	473	221	245	7.42	10,100	8400	14.0	18.0		
Sn96.5Ag3.5	430	430	221	221	7.36	8900	4600	14.0	17.0		
Sn96.5Ag3.0Cu0.5	422	428	217	220	7.40						
Sn95Sb05	450	464	232	240	7.26	5900	6200	11.9	14.0		
Sn99.3Cu0.7	440	440	227	227	7.31						

TENSILE STRENGTH (P.S.I.) OF SOFT SOLDERS AT ELEVATED AND BELOW ZERO TEMPERATURES

Alloy	Room Temp.	200°F	300°F	-200°F	-300°F
Sn05Pb95	4190	2965	1785		
Sn10Pb90	4700	2917	1863		
Sn20Pb80	5200	3043	1518		
Sn30Pb70	5750	3120	1495		
Sn40Pb60	6200	3320	1275		
Sn50Pb50	6450	3090	1150		
Sn60Pb40	6400	3150	1000		
Sn95Sb05	5900	3700	2000	10,750	12,000
Pb97.5Ag1.5Sn1	3600	2500	1750	7000	8750

FOUR BASIC TYPES OF STRESS

